

WHAT IS CLAIMED IS:

1 . A production apparatus for producing a gallium nitride film semiconductor by subjecting gallium chloride gas as a gallium source which is generated through the circulation of hydrogen chloride gas over metallic gallium to vapor phase deposition through the reaction with ammonia so as to form a gallium nitride film, wherein an electroconductive corrosion-resistant material is used as the constructional material for exhaust piping for exhaust gas, and said exhaust piping for exhaust gas is electrically grounded.

2 . The production apparatus according to Claim 1, wherein the electroconductive corrosion-resistant material is selected from the group consisting of stainless steel, high nickel steel, an electroconductive resin and a metallic material coated with an electroconductive resin.

3 . A cleaning apparatus for cleaning exhaust gas coming from a production apparatus for producing a gallium nitride film semiconductor by subjecting gallium chloride gas as a gallium source which is generated through the circulation of hydrogen chloride gas over metallic gallium to vapor phase deposition through the reaction with ammonia so as to form a gallium nitride film, wherein an electroconductive corrosion-resistant material is used as the constructional material for introduction piping, and said introduction piping is electrically grounded.

4 . The cleaning apparatus according to Claim 3, wherein the electroconductive corrosion-resistant material is selected

from the group consisting of stainless steel, high nickel steel, an electroconductive resin and a metallic material coated with an electroconductive resin.

5 . The cleaning apparatus according to Claim 3, wherein the cleaning apparatus is a wet absorptive cleaning apparatus.

6 . An overall production plant for producing a gallium nitride film semiconductor by subjecting gallium chloride gas as a gallium source which is generated through the circulation of hydrogen chloride gas over metallic gallium to vapor phase deposition through the reaction with ammonia so as to form a gallium nitride film, wherein an electroconductive corrosion-resistant material is used as the constructional material for exhaust gas piping which connects a production apparatus for producing a gallium nitride film semiconductor and a cleaning apparatus for cleaning exhaust gas, and said exhaust gas piping is electrically grounded.

7 . The overall production plant according to Claim 6, wherein the electroconductive corrosion-resistant material is selected from the group consisting of stainless steel, high nickel steel, an electroconductive resin and a metallic material coated with an electroconductive resin.

8 . The overall production plant according to Claim 6, wherein said plant is equipped with a means for sampling exhaust gas which circulates in the production apparatus, the cleaning apparatus or the exhaust gas piping which connects the production apparatus and the cleaning apparatus, and for detecting oxygen in said exhaust gas or measuring the

concentration of oxygen therein.

total feet